Todd Price  
Bio 307  
Sect. 1  
March 16, 2011

**The Biosphere – 9th Grade**

Upon completing this unit, the student will be able to…

1. Define ecology.
2. Describe a biosphere and the 6 different levels of organization an ecologist studies.
3. Construct and interpret a diagram of photosynthesis comparing its precursor molecular requirements and the products.
4. Compare 2 main forms of energy that power living systems.
5. Compare 2 different types of organisms based on their energy source and give examples of each.
6. Explain the efficiency of energy transfer between trophic levels.
7. Describe 4 types of heterotrophs.
8. Describe an ecological pyramid.
9. Define chemosynthesis and describe environments where organisms rely on the process for energy acquisition.
10. Describe 2 different ways that producers obtain their energy and give examples.
11. Make a flow chart detailing the main processes of the water cycle with 2 examples of how it enters the atmosphere.
12. Describe how matter flows through an ecosystem differently than energy.
13. Describe 3 different types of nutrient cycles and relate why they are considered essential.
14. Identify at least 3 ways carbon enters the atmosphere.
15. Propose a plan to limit the amount of free carbon in the atmosphere.
16. Describe how human activity adds nitrogen to the biosphere.